From: Ben Halpern [halpern@nceas.ucsb.edu]
To: WCGA
Cc: Adina Abeles
Subject: comment on WCGA paper

RE: West Coast Governor's Agreement on Ocean Health Discussion Paper

Dear Governor Schwarznegger, Governor Kulongoski, and Governor Gregoire,

Thank you for the opportunity to review and comment on your excellent discussion paper. If followed, these actions can improve the way in which we address ocean health along the west coast of the United States.
I would like to discuss with you the potential collaboration on one action item highlighted in your paper.

I am a scientist working at the National Center for Ecological Analysis and Synthesis (NCEAS) at the University of California, Santa Barbara.
For the last 3 years, I have been the Principal Investigator of a research team addressing questions that are highly relevant to Goal #2 ("Protect and restore ocean and coastal habitats") action #4 ("Identify important ecological areas within the CCLME, identify threats to those marine areas, and establish measures to ensure effective habitat
protection") in the WCGA discussion paper. Our research project is entitled "Ranking and mapping human threats and impacts to marine ecosystems in the California Current." We define the California Current as the region stretching from the US-Canada border to central Baja, Mexico.

The research that I and my collaborators from Stanford University, UCSB, and The Nature Conservancy are conducting has four distinct products, outlined below, that we believe are directly applicable to the three states as they work to implement a regional ocean action plan.

Ranking and Mapping Human Threats and Impacts to Marine Ecosystems in the California Current research products:

(1) A rigorous and quantitative method for evaluating how different human activities impact marine ecosystems. This will be useful because the consequences of human activities to marine systems are currently assessed in a fairly ad hoc

and subjective manner. In particular, we will be targeting experts from a variety of backgrounds, including academic, agency, non-governmental organizations, key stakeholders, and traditional knowledge holders, to develop these assessments.

(2) In collaboration with The Nature Conservancy, we will evaluate the interactive and cumulative impacts of multiple activities. We do not yet fully understand the cumulative impact of different activities that occur in a single location. They may have additive, multiplicative, or in some cases mitigative consequences for the marine ecosystems in that location. Relatively little work has been done on this topic, although it is widely recognized as a major management challenge. We will be reviewing and synthesizing existing data on the topic and developing a modeling framework to predict the likely impact of different combinations of human activities.

(3) We will be developing high-resolution (1km^2) maps of all marine ecosystems and the distribution and magnitude of human activities, both on land and in the ocean.

(4) We will produce a map of the cumulative impact of all human activities on marine ecosystems. We will be using new approaches in scientific integration to do so. These cumulative impact maps will help identify hotspots of human impacts and areas that are relatively pristine, and will provide very useful data for efforts to spatially separate (zone) different activities to minimize impacts of other human activities and the marine ecosystems. These maps can be used to identify hotspots, or areas, that are in greatest need of assistance from the states to decrease the cumulative human impact. By focusing on these hotspots, the states can target their efforts and efficiently use their resources in addressing the challenges facing our ocean (or something like that?)

I welcome the opportunity to discuss this project with you in more detail and would be happy to work to tailor our efforts to better meet the needs of the three states. We look forward to future communication that could help define and guide such a collaboration.

Sincerely,

Benjamin Halpern, Ph.D.

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